

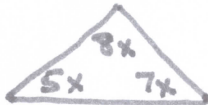
Name Answer Key

Period _____

Geometry Unit 6 Worksheet #3 – Proportions continued

For #1 – 4, Find the measures of the angles.

- 1) The ratio of the angles of a triangle are 5:7:8. Find each angle.



$$\begin{aligned} 5x + 7x + 8x &= 180 \\ 20x &= 180 \\ x &= 9 \end{aligned}$$

$$45^\circ, 63^\circ, 72^\circ$$

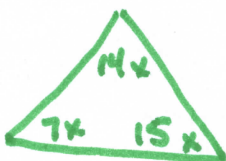
- 2) The ratio of the angles of a triangle are 2:5:3. Find each angle.



$$\begin{aligned} 2x + 3x + 5x &= 180 \\ 10x &= 180 \\ x &= 18 \end{aligned}$$

$$36^\circ, 54^\circ, 90^\circ$$

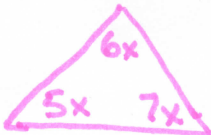
- 3) The ratio of the angles of a triangle are 7:14:15. Find each angle.



$$\begin{aligned} 7x + 14x + 15x &= 180 \\ 36x &= 180 \\ x &= 5 \end{aligned}$$

$$35^\circ, 70^\circ, 75^\circ$$

- 4) The ratio of the angles of a triangle are 5:6:7. Find the measures of the three angles.

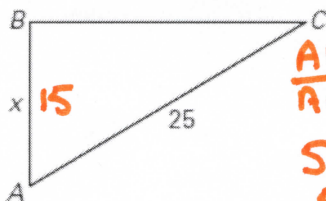


$$\begin{aligned} 5x + 6x + 7x &= 180 \\ 18x &= 180 \\ x &= 10 \end{aligned}$$

$$50^\circ, 60^\circ, 70^\circ$$

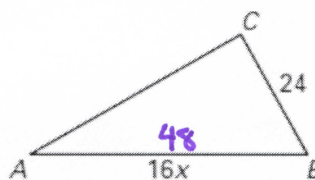
For #5-8, use the ratio of the sides to solve for the variable.

- 5) $AB:AC$ is 3:5.



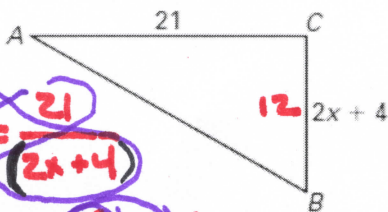
$$\begin{aligned} \frac{AB}{AC} &= \frac{3}{5} = \frac{x}{25} \\ 5x &= 3 \cdot 25 \\ 5x &= 75 \\ \frac{5}{5} & \quad \frac{5}{5} \\ x &= 15 \end{aligned}$$

- 6) $AB:CB$ is 2:1.



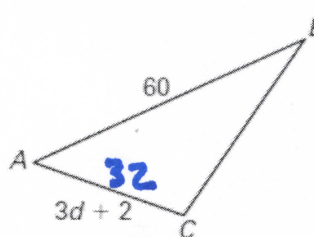
$$\begin{aligned} \frac{AB}{CB} &= \frac{2}{1} = \frac{16x}{24} \\ 1 \cdot 16x &= 2 \cdot 24 \\ 16x &= 48 \\ \frac{16}{16} & \quad \frac{16}{16} \\ x &= 3 \end{aligned}$$

- 7) $AC:BC$ is 7:4.



$$\begin{aligned} \frac{AC}{BC} &= \frac{7}{4} = \frac{21}{2x+4} \\ 4 \cdot 21 &= 7(2x+4) \\ 84 &= 14x + 28 \\ 56 &= 14x \\ \frac{56}{14} & \quad \frac{14}{14} \\ 4 &= x \end{aligned}$$

- 8) $AB:AC$ is 15:8.



$$\begin{aligned} \frac{AB}{AC} &= \frac{15}{8} = \frac{60}{3d+2} \\ 8 \cdot 60 &= 15(3d+2) \\ 480 &= 45d + 30 \\ -30 & \quad -30 \\ 450 &= 45d \\ \frac{450}{45} & \quad \frac{45}{45} \\ 10 &= d \end{aligned}$$